

REMARKS

Claims 9-16 are pending in this application. Claim 9 has been amended. Claim 17 has been added. No new matter has been added by the present amendment.

The Examiner's reconsideration of the rejection is respectfully requested in view of the following remarks.

Interview Summary

Applicant wishes to thank the Examiner and his Supervisor for the courtesies extended during the telephonic interview of March 12, 2007 among the Examiner, his Supervisor, and the undersigned. During the interview, the differences between the present invention and the references of record including Rha were discussed. The Examiner acknowledged that the etch rate difference between the silicon oxide liner and the first buried layer of silicon oxide of the present invention is not disclosed by any of the cited references.

Rejections Under 35 U.S.C. § 103:

Claims 9, 10, 15 and 16 stand rejected under 35 U.S.C § 102(b) as being unpatentable over U.S. Patent to Rha (6,127,241) in view of the U.S. Patent to Yu (5,801,083) and U.S. Patent to Moore (6,051,480) for the reasons stated on pages 2-4 of the Final Office Action. Applicants note that the rejections are being treated as being under 35 U.S.C § 103(a).

Amended claim 9 recites, *inter alia*, partially etching the hardened and densified silicon oxide liner formed under the first buried layer of silicon oxide during recessing an upper surface of the first buried layer by etching. The present application states that "as

the HTO layer 17 (in FIG. 3) is densified, the etch rate of the HTO layer 17 (in FIG. 3) is lower than the first buried layer 21 (in FIG. 3). And the HTO layer 17 (in FIG. 3) under the first buried layer 21 (in FIG. 3) is partially etched during forming the recessed first buried layer 23 and remains in the trench as a remaining HTO layer 17'." See paragraph [0026] of the present application.

Applicants respectfully submit that neither Rha, Yu, Moore, nor any combination thereof teaches or suggests the above-claimed feature. Rha does not disclose or suggest partially etching the hardened and densified silicon oxide liner formed under the first buried layer of silicon oxide during recessing an upper surface of the first buried layer by etching. Applicants respectfully submit that Rha does not disclose a first buried layer of silicon oxide layer. The Examiner states that the first buried layer is component 36 in Rha. *See* page 3 of the Final Office Action. Applicants respectfully disagree. The component 36 of Rha is amorphous carbon. Thus, the first buried layer (36), i.e. the amorphous carbon, is formed of a material different from the silicon oxide layer (35). Consequently, the silicon oxide layer (35) of Rha is not etched when the first buried layer (36) of amorphous carbon is etched.

Yu and Moore do not cure the deficiency of Rha.

Thus, claim 9 is not rendered obvious by Rha in view of Yu and Moore.

Claims 10, 15 and 16 depend from claim 9. The dependent claims are believed to be allowable due to their dependency on the allowable base claim 9.

Accordingly, the Applicant respectfully requests that the Examiner withdraw the rejection of claims 9, 10, 15 and 16 under 35 U.S.C § 103(a) and that claims 9, 10, 15 and 16 are in condition for allowance.

Claim 11 stands rejected under 35 U.S.C § 102(b) as being unpatentable over Rha in view of Yu as applied to claim 9, in further view of U.S. Patent to Oh (6,187,651) for the reasons stated on pages 5 and 6 of the Office Action. Applicants note that the rejections are being treated as being under 35 U.S.C § 103(a).

As discussed above, Rha and Yu do not teach or suggest partially etching the hardened and densified silicon oxide liner formed under the first buried layer of silicon oxide during recessing an upper surface of the first buried layer by etching, as essentially claimed in amended claim 9. Oh does not cure the deficiency of Rha and Yu. Based on the above, independent claim 9 is patentable over Rha in view of Yu and Oh. Since claim 11 depends from claim 9, claim 11 is also patentable.

Claims 12-14 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Rha in view of Yu as applied to claim 9, in further view of U.S. Patent to Zheng (5,728,621) and Fukuyama (5,770,260) for the reasons stated on pages 5-7 of the Final Office Action.

As discussed above, Rha and Yu do not teach or suggest partially etching the hardened and densified silicon oxide liner formed under the first buried layer of silicon oxide during recessing an upper surface of the first buried layer by etching, as essentially claimed in amended claim 9. Zheng, which is only directed to forming a layer of high density plasma oxide (HDP) by chemical vapor deposition (CVD), does not cure the deficiency of Rha and Yu. Further, Fukuyama, which is only directed to a process for forming a silicon dioxide film, does not cure the deficiency of Rha, Yu and Zheng. Based on the above, independent claim 9 is patentable over Rha in view of Yu, Zheng

and Fukuyama. Since claims 12-14 depend from claim 9, claims 12-14 are also patentable.

For the foregoing reasons, the present application is believed to be in condition for allowance. The Examiner's early and favorable action is respectfully requested. The Examiner is invited to contact the undersigned if he has any questions or comments in this matter.

Respectfully submitted,

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